

New and little known Aradidae from India in the Muséum d'Histoire naturelle de Genève (Heteroptera)

by

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With 32 figures and 2 photos

ABSTRACT

The author proposes the following new taxa: *Acoryphocoris indicus* n. sp., *A. similis* n. sp., *Clavicornia subparallela* n. sp., all from Northern India; *Bengalaria gibbosa* n. g., n. sp. and *B. simplex* n. g., n. sp., both from West Bengal; *Libiocoris indicus* n. sp., *Morphocoris sculpturatus* n. sp., *Neuroctenus meghalayensis* n. sp. and *Mezira (Zimera) loebli* n. sp., all from Northern India. A new genus, *Pseudomezira* n. g. is erected for the species *Mezira nuda* Korm. et Heiss, 1973.

I thank Dr. Ivan Löbl, Muséum d'Histoire naturelle, Genève, for the possibility to study this interesting material, which has been collected by Dr. Besuchet and himself in Northern India and West Bengal¹. I also thank Mr. N. A. Kormilev, Woodhaven, USA for his continuous help and valuable contribution to this work.

All measurements in this paper were taken with micromillimeter eyepiece, 25 units = 1 mm. In ratios the first figure represents the length and the second the width of measured portion. The length of abdomen in macropterous species was taken, for convenience, from the tip of scutellum to the tip of hypopygium, or segment IX in the females respectively.

¹ Material collected with a subvention of the "Commission de la bourse fédérale pour voyages d'études d'histoire naturelle".

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Subfamily ANEURINAE

Genus *Aneurus* Curtis, 1825*Aneurus assamensis* Kormilev, 1977

1977, *Aneurus assamensis* Kormilev, *Trans. Am. ent. Soc.* 103: 606

2 ♂♂, India, Meghalaya, Khasi Hills, Mawphlang 1800 m; 28.X.1978, Besuchet & Löbl leg., Mus. Hist. nat. Genève and Coll. Heiss.

Subfamily CARVENTINAE

Genus *Morphocoris* Kormilev, 1980

1977, *Glyptomorpha* Kormilev, *Trans. Am. ent. Soc.* 103: 613 (preoccupied).

1980, *Morphocoris* Kormilev, *Pacif. Insects* 22 (3-4): 328.

Morphocoris sculpturatus n. sp. (Figs. 1, 2)

MALE. Elongate ovate; glabrous, only lateral borders with a few short bristles. Covered with brown incrustation. Apterous.

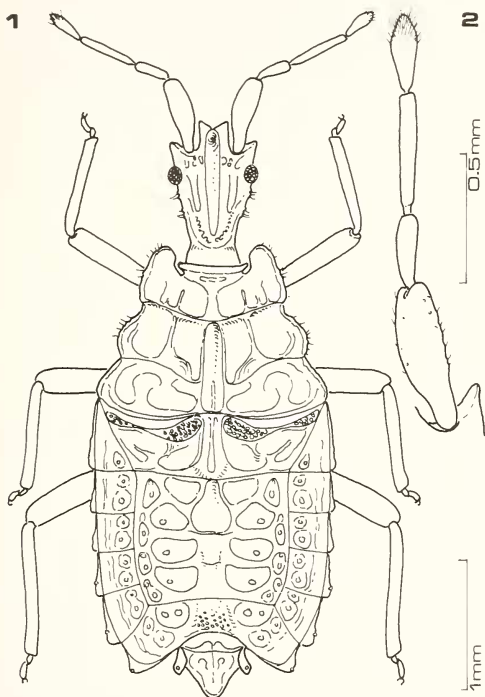
Head longer than its width across eyes (23:18); anterior process with parallel sides, cleft anteriorly, clypeus shorter than genae, reaching basal $\frac{1}{3}$ of antennal segment I. Antenniferous tubercles acute and divaricating. Eyes small, protruding, with convex facetae. Behind eyes are placed 2 (1+1) clusters of minute granules; behind granules postocular borders are long, straight and converging. Vertex with a thin and high median ridge; infraocular callosities large, ovate, convex, separated from median ridge by deep sulci. In front of infraocular callosities, laterad of base of clypeus, are placed 4 (2+2) small, elongate depressions. Antennae thin, only the first segment is thick; relative length of antennal segments I to IV are: 15:7:12:7.5. Labium arising from split-like atrium, reaching hind border of labial groove, which is open posteriorly; lower side of the head behind labial groove is finely granulate.

Pronotum only $\frac{2}{5}$ as long as its maximum width (11:28); anterolateral angles produced forward as 2 (1 + 1) granulate and rounded anteriorly pronges. Between collar and pronges deep incisures. Collar thin, raised, truncate anteriorly and separated from disc by a deep, transverse sulcus. Disc of pronotum smooth and shiny, raised in a shape of an "omega", deeply depressed between cracks of "omega" and less so laterad of it.

Mesonotum is wider than pronotum (37:28), separated from the latter by deep, transverse depression. Across meso and metanotum medially extends narrow, smooth ridge, with a thin median sulcus on metanotum. Laterad of median ridge are placed a few, some of them wide, others narrow, longitudinal elevations and ridges; along lateral borders extend 2 (1+1) thin, granulate carinae. Mesonotum is separated from metanotum, laterad of median ridge, by 2 (1+1) large and deep depressions.

Metanotum is wider than mesonotum (45:37), not fused with tergum I. Laterad of ridge depressed and with 2 (1+1) ridges in the shape of a "horse-shoe". Along lateral borders are placed 2 (1+1) high, granulate ridges.

Abdomen slightly longer than its maximum width across segment II (50:48); lateral borders nearly parallel and slightly festooned from II to VI. Terga I and II completely fused together and separated by a thin, transverse sulcus from central dorsal plate. Tergum I anteriorly with 2 (1+1) transverse carinae; behind these carinae irregu-



FIGS. 1-2.

Morphocoris sculpturatus n. sp.;

1: Paratype ♂, dorsal; 2: dto. right antenna.

larly, finely granulate and strongly depressed medially. Tergum II with 2 (1+1) transverse elevations laterad of median depression. Central dorsal plate, consisting of terga III to VI, truncate anteriorly and posteriorly; its lateral borders converging backward in an arc. Disc is strongly raised medially and deeply depressed laterad of median elevation; with usual pattern of 2 (1+1) rows of larger and 2 (1+1) of smaller, round, callous spots. Median ridge has on terga III and IV a pearshaped elevation, flanked

anteriorly by 2 (1+1) irregular, smaller elevations; on terga V and VI it has subparallel borders emitting transverse carinae between V and VI. Tergum VII is strongly raised backward and finely granulate on disc. Connexiva II and III fused together; exterior borders of connexiva II to IV with a row of fine granules; limits between connexiva incised exteriorly; exterior borders of connexivum V with elongate tubercle, connexivum VI with a larger tubercle. Posteroexterior angles of connexivum VII forming subangular lobes. Spiracles II to IV ventral, V to VII lateral and visible from above, VIII terminal. Paratergites clavate, reaching $\frac{1}{2}$ of hypopygium, which is strongly declivous. Hypopygium acorn-shaped, tapering toward tip, as long as its maximum width (10:10), irregularly rugose, carinate on upper border and around tip, and with median ridge not reaching tip of disc.

Ventral side: prosternum with V-shaped median carina; meso and metasternum raised anteriorly and posteriorly and transversely depressed in the middle. Sterna II to VI inflated along hind borders and depressed anteriorly, with a few granules in the depressed portion.

Legs: trochanters semifused with femora; the latter unarmed.

Color: reddish brown; incrustation brown.

Total length 4.45 mm; width of pronotum 1.12 mm; width of abdomen 1.92 mm. Holotype ♂, India, Meghalaya, Khasi Hills, under Tura; 700–900 m, 1.XII.1978, Besuchet & Löbl leg.; deposited at Mus. Hist. nat. Genève.

Paratype ♂, India, Meghalaya, Garo Hills 15 km north of Danugiri, 400 m, 4.XI.1978, Besuchet & Löbl leg., in Heiss collection.

Morphocoris sculpturatus n. sp. is related to *M. thailandicus* (Kormilev, 1977), but may be separated by the shape of terga I and II and by the shape of median ridge on terga III and IV.

Genus *Libiocoris* Kormilev, 1957

Libiocoris indicus n. sp. (Figs. 3–5)

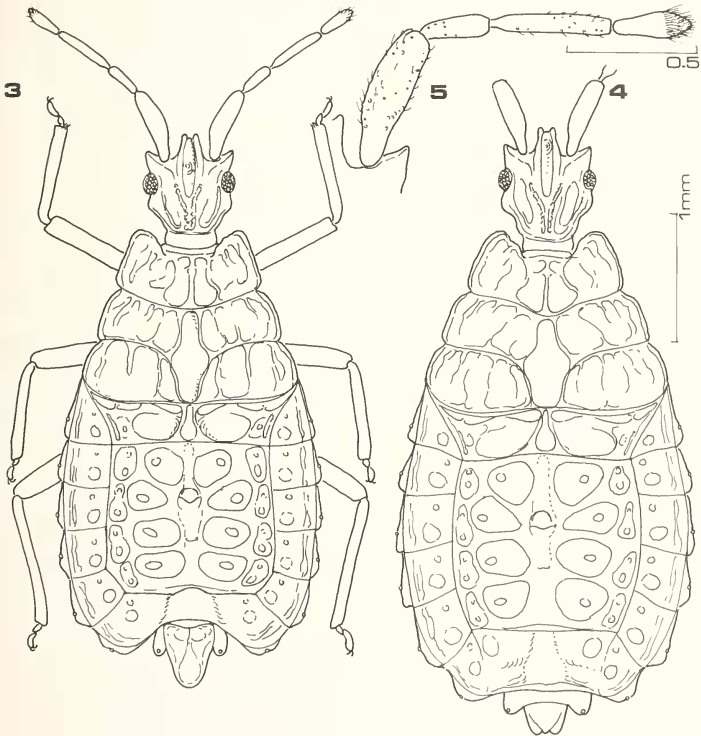
MALE. Elongate ovate, tapering anteriorly; naked and shiny, but covered with brown incrustation. Apterous.

Head longer than its width across eyes (20:17.5); anterior process short, slightly notched anteriorly, clypeus strongly raised anteriorly, reaching basal $\frac{1}{4}$ of antennal segment I. Antenniferous tubercles short, blunt, divaricating. Eyes small, with convex facetae. Postocular tubercles widely rounded, not reaching outer borders of eyes; postocular borders behind tubercles straight and converging. Vertex with Y-shaped granulate carina; infraocular callosities large, ovate, separated from median carina by deep sulci. Antennae long, more than twice as long as width of head across eyes (40.5:17.5); relative length of antennal segments I to IV are: 14:7:12:7.5. Labial atrium split-like; labium not reaching hind border of labial groove, closed posteriorly.

Pronotum short and wide (12:29); collar slightly sinuate anteriorly and clearly separated from disc. Anterolateral angles produced forward far beyond collar as 2 (1 + 1) large, blunt, granulate lobes. Disc with horse-shoe-shaped median carina, deeply depressed between lateral branches, and flanked by 2 (1 + 1) deep, curved sulci. Pronotum is separated from mesonotum by 2 (1 + 1) depressions converging in middle.

Mesonotum is wider than pronotum (36:29); separated from metanotum by similar depressions as from pronotum. Across meso and metanotum medially extends elongate, rhomboid ridge, rounded anteriorly and narrowly truncate posteriorly. Laterad of this ridge are placed on mesonotum 4 (2+2) longitudinal ridges, and further laterad densely granulate surfaces. Between pro and mesonotum, and meso and metanotum, lateral borders are incised.

Metanotum is wider than mesonotum (43:36); its hind border is with narrow, transverse sulcus separating it from tergum I; laterad of median ridge are placed 2 (1+1) triangular ridges, and further laterad 2 (1+1) shorter, ovate ridges. Along lateral borders are placed densely granulate plates, similar to those on mesonotum.



FIGS. 3-5.

Libiocoris indicus n. sp.;

3: Holotype ♂, dorsal; 4: Allotype ♀, dorsal; 5: Holotype, right antenna.

Abdomen is longer than its maximum width across segment IV (55:51). Tergum I is fused with tergum II; it has a shape of 2 (1+1) transverse narrow carinae, separated medially by narrow and deep depression, into which enters tip of a small median ridge of tergum II. Tergum II is wide, sloping backward and sideways, forming 2 (1+1) large, ovate plates flanking median ridge; further laterad are placed 2 (1+1) transverse sulci, limited by uneven surfaces.

Central dorsal plate consisting of terga III to VI is subrectangular, moderately raised medially as a narrow carina on tergum III; as pentagonal elevation depressed medially on tergum IV (scares of scent gland openings); and as a tapering ridge on V and VI. Laterad of median ridge is a usual pattern of large and small callous spots. Connexivum is flat and finely, irregularly rugose, with a round callous spot on each segment from III to VII. Posteroexterior angles of connexiva from II to VI are progressively protruding; on VII forming obliquely truncate lobes. Paratergites clavate, short; hypopygium strongly declivous. Spiracles II to VII lateral, VIII dorso-lateral.

Ventral side. Prosternum raised medially and with a thin sulcus on elevation medially; meso and metasternum and sternum II, depressed medially. Sterna III to VI raised along hind border, depressed and scabrous along fore border; sternum III has ovate, and sterna IV to VI have triangular, smooth spot medially, flanked by 2 (1+1) large, transversely ovate callous spots, and further laterad 4 (2+2) smaller round callous spots.

Color reddish brown, incrustation brown.

FEMALE. Similar to male, but larger. Exterior borders of abdomen look festooned; posteroexterior angles of connexivum VII rounded; paratergites blunt, reaching basal $\frac{1}{3}$ of slightly incised segment IX; tergum VII raised medially forming a ridge.

Measurements: head 20:19; relative length of antennal segments I to IV are: 15:8:12:7; pronotum 13:31; width of mesonotum 40; width of metanotum 48; abdomen 67:59; width of tergum VIII 19.

Total length: ♂-4.38; ♀-4.80 mm; width of pronotum: ♂-1.16, ♀-1.24 mm; width of abdomen: ♂-2.00, ♀-2.36 mm.

Holotype ♂, India, Meghalaya, Khasi Hills; under Shillong, 1850-1950 m; 25.X.1978; Besuchet & Löbl leg. Deposited at the Muséum d'Histoire naturelle, Genève.

Allotype ♀, India, Meghalaya, Khasi Hills, Mawphlong 1800 m; 29.X.1978; Besuchet & Löbl leg., deposited at the same museum.

Paratype ♂, collected with Holotype in Heiss coll.; also 2 larvae were collected.

This species is tentatively put in the genus *Libiocoris*, although showing some differences (not fused meso- and metanotum, no sulcus on medial ridge of meso and metanotum), where it is related to *L. antennatus* Usinger and Matsuda, 1959. but differing by shorter antennae, only 2.1 × as long as length of head (2.46 × in *antennatus*) and the abovementioned differences.

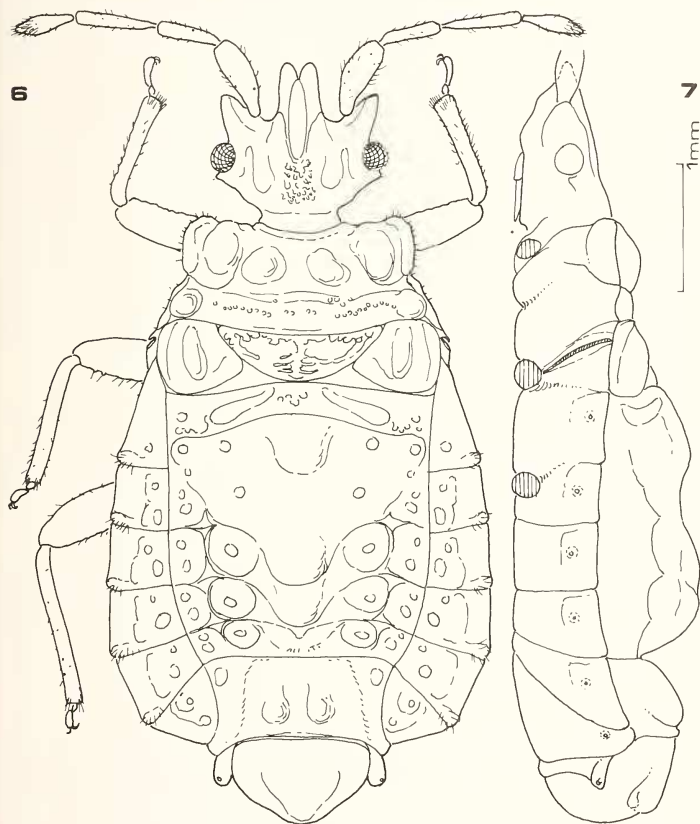
Subfamily MEZIRINAE

Bengalaria n. gen.

Elongate ovate, covered with thin layer of sticky incrustation. Brachypterous.

Head shorter than its width across eyes; anterior process strong, with parallel sides, incised anteriorly, not reaching tip of antennal segment I. Antenniferous tu-

bercles stout, blunt, divaricating. Eyes small, strongly protruding, but not pedunculate. Postocular tubercles minute, by far not reaching outer border of eyes; postocular borders behind them firstly sinuate, then convex. Vertex raised and granulate. Antennae relatively short, $1.6-1.8 \times$ as long as width of head across eyes; antennal segment I subequal in length to III, and II to IV. Labium preapical, labial atrium split-like, labium reaching hind border of labial groove, which is closed posteriorly.



FIGS. 6-7.

Bengalaria gibbosa n. gen., n. sp.;

6: Holotype ♂, dorsal; 7: dto. lateral.

Pronotum short and wide, its hind lobe greatly reduced; anterolateral angles moderately expanded, rounded and produced forward beyond collar; lateral notch deep; hind border slightly convex. Fore disc granulate, with median depression flanked by 2 (1+1) granulate ridges, and further laterad by 2 (1+1) larger, sublateral ridges. Hind disc with a row of granules along anterior border and raised along hind border. 2 (1+1) round, granulate tubercles are placed posterolaterally on hind disc, they are more developed in the male.

Scutellum greatly abbreviated, almost 3 × as wide as its median length, and rounded posteriorly. All borders carinate, disc with median ridge.

Hemelytra reduced, covering most of metanotum; clavus and membrane are absent.

Abdomen longer than its maximum width (♂), or almost as long as wide (♀). Central dorsal plate consisting of terga I–VI which are fused together. Tergum I transversely raised, its hind border medially separated by a thin sulcus, but laterally fused with tergum II. The latter raised medially, forming together with tergum I the anterior hump; tergum III is depressed, forming a saddle; terga IV and V also raised medially, forming together the posterior hump; tergum VI is declivous backward. Tergum VII separated from central dorsal plate by a deep, transverse depression; its disc is strongly raised backward in both sexes: in a male forming a ridge slightly depressed medially; in a female forming biheaded ridge, strongly depressed medially. Connexiva moderately raised at hind borders; sparsely granulate in males, longitudinally rugose in females. Paratergites (♂) clavate, reaching ½ of globose hypopygium, the latter with triangular median ridge not reaching tip of disc. Paratergites (♀) very short and rounded posteriorly, reaching basal 1/3 of truncate segment IX. Spiracles II to VII ventral, placed far from border; VIII lateral and visible from above.

Ventral side. Prosternum raised longitudinally; mesosternum flat and granulate; metasternum slightly depressed medially. Sterna flat, more granulate on posterior half. Metathoracic scent gland openings slightly visible from above.

Legs: unarmed; middle and hind femora with a row of small teeth posteriorly (♂); with one longer tooth and a few smaller on hind femora (♀). Front tibiae with subapical comb; tarsi with arolia.

Type species: *Bengalaria gibbosa* n. sp.

The new genus *Bengalaria* has no closer relations to one of the brachypterous genera of Mezirinae. It resembles somewhat *Axapisocoris* Kormilev and Heiss 1980, but differs from this and all other genera by the characteristic fusion of the tergal plate with elevated humps.

Bengalaria gibbosa n. ssp. (Figs. 6-9)

MALE. Brachypterous.

Head transverse, shorter than its width across eyes (29:33); anterior process reaching 2/3 of antennal segment I; relative length of antennal segments I to IV are: 15:12.0:15:12.0. Labium reaching hind border of labial groove, which is closed posteriorly.

Pronotum short and wide (13:50); collar granulate, sinuate anteriorly; anterolateral angles rounded. Pronotum separated from scutellum by thin sulcus.

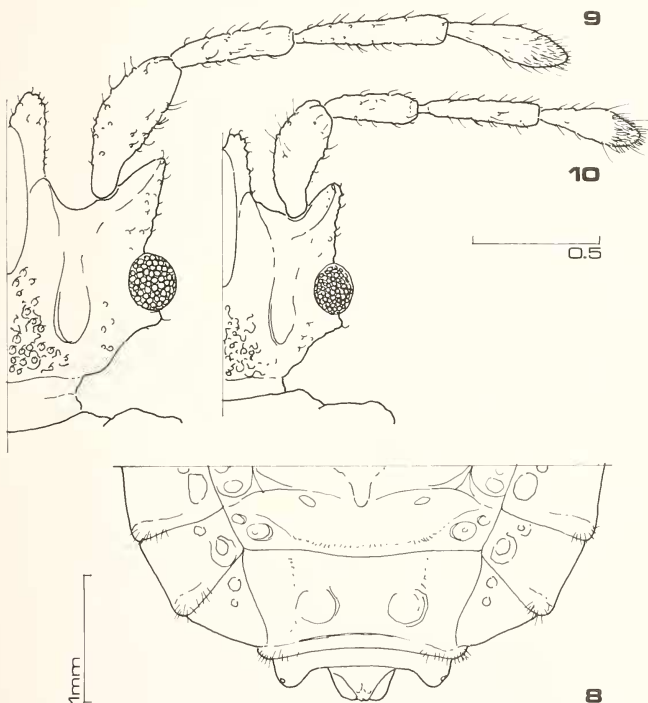
Scutellum short and wide (10:31); granulate along borders and with a cluster of granules at apex; median ridge thin.

Hemelytra without clavus and membrane; corium with high and stout longitudinal ridge in the middle; a portion of metanotum is visible behind corium.

Abdomen longer than its maximum width across segment V (88:74); lateral borders diverging at II, subparallel from III to V, converging at VI and transverse at VII. Paratergites reaching $\frac{1}{2}$ of a large, globose hypopygium, median ridge reaching $\frac{3}{4}$ of disc. Spiracles II to VII ventral, placed far from border; VIII lateral.

Color: black; bases of antennal segments I to IV, apex of IV, bases of tibiae, and tarsi, are yellow brown.

FEMALE. Larger than a male; ridges of pronotum subequal in length and slightly less developed than in male, particularly posterolateral tubercles of hind lobe. Disc of



FIGS. 8-10.

Bengalaria gibbosa n. gen., n. sp.;

8: Paratype ♀, terminal segments dorsal; 9: Holotype, head and right antenna

Bengalaria simplex n. sp.; 10: Holotype ♂, head and right antenna.

scutellum more granulate medially and rugose along borders. Abdomen more ovate; central dorsal plate more raised laterally than in the male, forming zig-zag ridge. Connexivum longitudinally rugose.

Measurements: head 33:37; relative length of antennal segments I to IV are: 15:12:15:12.5; pronotum 23:57; scutellum 14:34; abdomen 98:94 (across segment IV); width of tergum VIII 33.

Total length: ♂-6.0, ♀-6.90 mm; width of pronotum: ♂-2.0, ♀-2.28 mm; width of abdomen: ♂-2.96, ♀-3.76 mm.

Holotype ♂, India, West Bengal, Darjeeling Dist., Ghoom-Lopchu 2000 m, 14.X.1978; Besuchet & Löbl leg. Deposited at the Mus. Hist. nat. Genève.

Allotype ♀, India, West Bengal, Darjeeling Dist., Algarah-Labha 1800 m, 11.XI.1978; Besuchet & Löbl leg. In the same museum.

Paratype ♀, collected with Holotype in Heiss coll.

***Bengalaria simplex* n. sp. (Fig. 10)**

MALE. Elongate ovate, covered with thin layer of sticky incrustation; granulate. Brachypterous.

Similar to *Bengalaria gibbosa* n. sp., but smaller and all ridges and humps are greatly reduced. Head less transverse (25:26); anterior process cleft, reaching $\frac{2}{3}$ of antennal segment I; antenniferous tubercles strong, blunt, divaricating; eyes less protruding; postocular tubercles minute; postocular borders behind them slightly sinuate; vertex less raised. Antennae $1.70 \times$ as long as width of head across eyes; relative length of antennal segments I to IV are: 12:9.5:12:10.5. Labium not reaching hind border of labial groove, which is closed posteriorly.

Pronotum short and wide (17:46); inner ridges of fore lobe developed, but outer ridges rudimentary; anterolateral angles subangular and not produced beyond collar; the latter better developed, sinuate anteriorly. Hind lobe transversely rugose; posterolateral tubercles not developed.

Scutellum half as long as its basal width (12:25) and rounded posteriorly; all borders carinate; disc strongly raised medially.

Hemelytra without clavus and membrane, raised medially and covering metanotum completely.

Abdomen longer than its maximum width across segment VI (75:58); tergum I with transverse row of granules; central dorsal plate consisting of terga I-VI fused together with a median sulcus between terga I-II. Anterior hump (terga I+II) barely developed; posterior hump (terga IV+V) well developed; lateral zig-zag ridge reduced to a short ridge on tergum IV. Tergum VII strongly raised posteriorly for reception of hypopygium. Connexivum flat, with almost obliterated granulation. Paratergites clavate, reaching $\frac{1}{2}$ of hypopygium. The latter short and wide (15:24), strongly raised medially; median ridge ovate, less discernible than in *B. gibbosa*, reaching tip of disc. Spiracles II to VII ventral placed far from border, VIII lateral and visible from above.

Legs: front and middle legs unarmed; hind femora with a tooth on posterior side.

Color: black; antennal segments II and IV, and bases of tibiae, yellow brown; tarsi light yellow brown.

Total length 5.20 mm; width of pronotum 1.84 mm; width of abdomen 2.32 mm.

Holotype ♂, India, West Bengal, Darjeeling Dist., 13 km N. of Ghoom, 1500 m., 15.X.1978; Besuchet & Löbl leg.; Deposited at the Museum d'Histoire naturelle, Genève.

Paratype 1 ♂, collected with holotype (Kormilev collection).

Genus *Neuroctenus* Fieber, 1861

Neuroctenus meghalayensis n. sp. (Figs. 11–15)

MALE. Elongate ovate; head, pronotum, scutellum partially, and hypopygium, finely granulate; scutellum partially and corium rugose; connexivum finely punctured.

Head slightly longer than its width across eyes (27:26); anterior process almost reaching tip of antennal segment I; antenniferous tubercles short, blunt, divaricating; postocular acute, not reaching outer borders of eyes. Eyes large, protruding. Vertex raised and granulate. Antennae $1.80 \times$ as long as width of head across eyes (47:26); relative length of antennal segments I to IV are: 11:11:13:12. Labium not reaching hind border of labial groove, which is closed posteriorly.

Pronotum short and wide (25:56); collar produced forward and slightly sinuate anteriorly; anterolateral angles rounded and carinate, neither produced forward, nor sideways; lateral notch shallow; lateral borders of hind lobe parallel, converging anteriorly; hind border widely sinuate. Fore disc with shallow, median depression, flanked by 2 (1+1) crescent-shaped callosities, and further laterad by 2 (1+1) sublateral, small ridges. Hind disc sharply granulate.

Scutellum shorter than its basal width (30:35); lateral borders carinate and slightly sinuate before apex, the latter angular. Disc with median ridge on posterior $\frac{2}{3}$, granulate on basal $\frac{1}{3}$, transversely rugose on apical $\frac{2}{3}$.

Hemelytra reaching tip of tergum VII; corium reaching basal $\frac{1}{3}$ of connexivum III; its apical angle acute, apical border twice sinuate.

Abdomen longer than its maximum width (91:67.5); lateral borders rounded; posteroexterior angles of connexiva II to VI slightly protruding; VII rounded. Paratergites minute, clavate, reaching $\frac{1}{2}$ of subcordate hypopygium, the latter short and wide (13:20), roundly depressed and transversely rugose at base medially, depressed second time before tip. Spiracles II to VII ventral, placed far from border; VIII lateral and visible from above.

Legs: femora and tibiae with very fine granulation.

Color: Piceous; labium and tarsi yellow.

FEMALE. Similar to male but larger; paratergites angular, reaching $\frac{1}{2}$ of truncate segment IX.

Measurements: head 30:28; relative length of antennal segments I to IV are: 13:13:15:13; pronotum 30:63; scutellum 33:41; abdomen 101:77; width of tergum VIII 24.

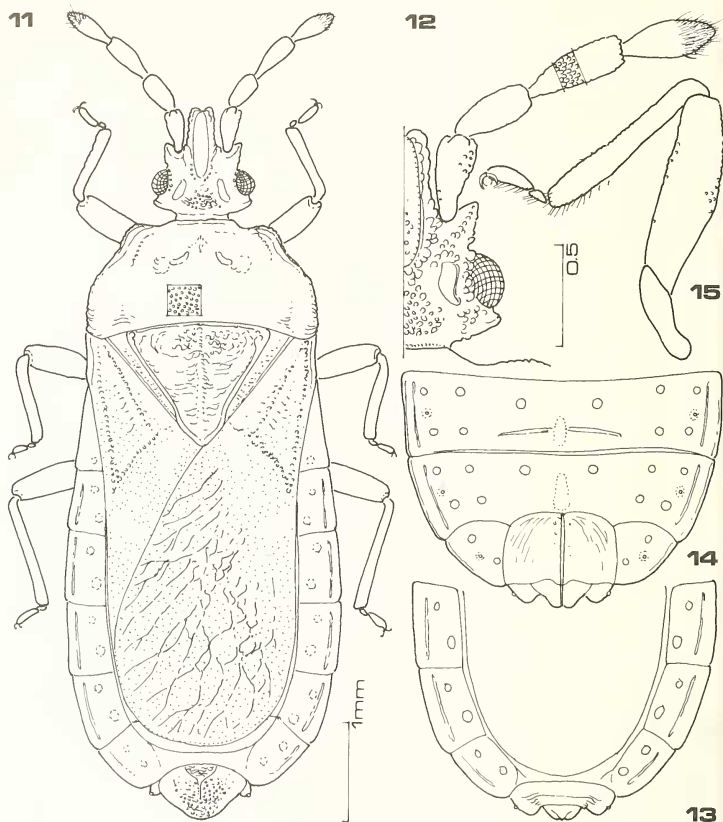
Total length: ♂–7.15, ♀–7.85 mm; width of pronotum: ♂–2.24, ♀–2.53 mm; width of abdomen: ♂–2.70, ♀–3.08 mm.

Holotype ♂, India, Meghalaya, Khasi Hills, Cherrapunjee, 1200 m, 26.X.1978, Besuchet & Löbl leg. Deposited at the Muséum d'Histoire naturelle, Genève.

Allotype ♀, collected with holotype; same collection.

Paratypes ♂♂, ♀♀, collected with holotype at Mus. Hist. nat. Genève and Heiss coll.

Neuroctenus meghalayensis n. sp. is related to *N. granulatus* Kormilev, 1973, but is larger; relative length of antennal segments is different: antennal segment IV (♂) is longer than I and shorter than III; hind disc of pronotum is granulate on the whole surface; scutellum granulate at base, transversely rugose on apical $\frac{2}{3}$; connexivum finely punctured, without rows of granules externally; hypopygium is relatively longer.



FIGS. 11-15.

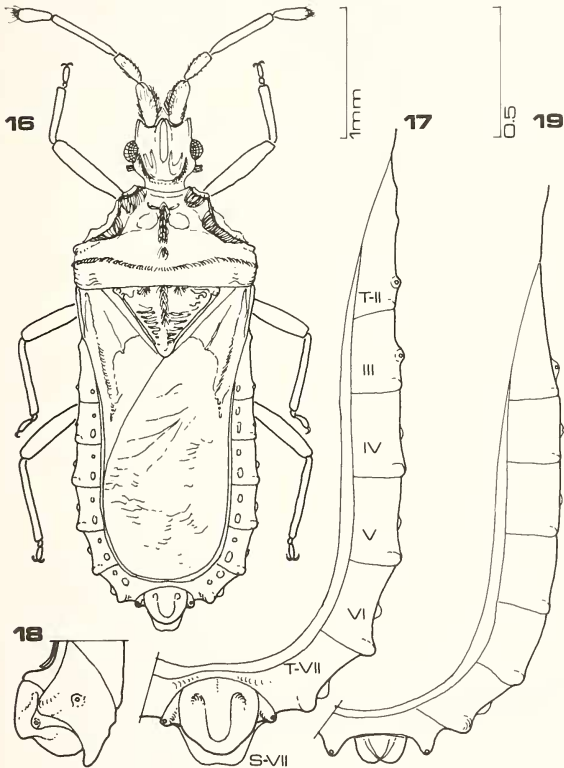
Neuroctenus meghalayensis n. sp.;

11: Paratype ♂, dorsal; 12: dto. head and right antenna;
13: Paratype ♀, terminal segments dorsal; 14: dto. ventral; 15: male, fore leg.

Genus *Acoryphocoris* Usinger and Matsuda, 1959*Acoryphocoris indicus* n. sp. (Figs. 16–18, 21)

MALE. Elongate ovate, partly covered with short, curled hairs.

Head shorter than its width across eyes (11:15); anterior process short, reaching tips of acute antenniferous tubercles; the latter reaching basal $\frac{1}{5}$ of antennal segment I.



FIGS. 16–19.

- 16: *Acoryphocoris indicus* n. sp. Holotype ♂, dorsal;
 17: dto. connexiva, dorsal; 18: dto. genital segments lateral;
 19: *Acoryphocoris similis* n. sp., Holotype ♀, connexiva, dorsal.

Eyes large, protruding. Postocular tubercles absent, a tuft of hairs behind eyes is directed posterolaterally and almost reaching outer border of eyes; borders behind them strongly converging; hind border of head truncate. Vertex raised medially, without granulation; infraocular carinae distinct and covered with curled hairs, extending backward until hind border of head. Infraocular callosities with thin, anastomosed carination. Antennae slender, $2.46 \times$ as long as width of head across eyes; antennal segment I stout, with long curled hairs on inner side, other thinner and with less pilosity; relative length of antennal segments I to IV are: 10:7:15:7. Labium arising from split-like atrium and not reaching hind border of labial groove, which is closed posteriorly.

Pronotum short and wide (17:36); fore lobe narrower than hind lobe (18:36); collar truncate anteriorly; anterior borders laterad of collar receding and raised backward, terminating in a blunt tooth; behind tooth lateral borders of fore and hind lobe together are strongly sinuate and carinate, partly covered with tufts of long hairs and extending until humeri; lateral borders at humeri parallel, hind border truncate. Fore disc behind collar transversely depressed; behind depression with a double carina flanked by 2 (1+1) callosities; medially with tufts of hairs extending to $\frac{1}{2}$ hind disc. Hind disc with a carina-like tuft of hairs, extending between humeri, sinuate medially and convex laterally.

Scutellum shorter than its basal width (15:20); lateral borders carinate, converging at base and slightly sinuate before apex, which is rounded; median ridge thin, slightly raised at base, then lower, with 2 (1+1) tufts of hairs laterad of base of ridge, which is partly covered with curled hairs; disc transversely rugose.

Hemelytra reaching $\frac{1}{2}$ of tergum VII; corium reaching $\frac{1}{2}$ of connexivum III; its basolateral borders reflexed and slightly converging; apical border deeply sinuate, apical angle acute; lateral vein with curled hairs on apical half. Membrane with anastomosed veins at base, obliquely rugose elsewhere.

Abdomen longer than its maximum width across segment IV (53:36); connexiva II and III not fused together; posteroexterior angles of connexiva II to VII progressively protruding, becoming dentiform. Paratergites short, cylindrical, reaching $\frac{1}{2}$ of almost vertical hypopygium, which is longer than wide (10:8). Spiracles large; II and III lateral; IV to VII sublateral or ventral, placed close to border, and slightly visible from above; VIII terminal. Sternite VII producing backward beyond hypopygium ventrally and is visible from above.

Legs unarmed.

Color: dark brown; base of membrane yellowish; tarsi and labium yellow brown.

Total length 3.90 mm; width of pronotum 1.44 mm; width of abdomen 1.44 mm.

Holotype ♂, India, Meghalaya, Khasi Hills, between Mawsguram and Balat; 1000 m, 27.X.1978; Besuchet & Löbl leg. Deposited at the Muséum d'Histoire naturelle, Genève.

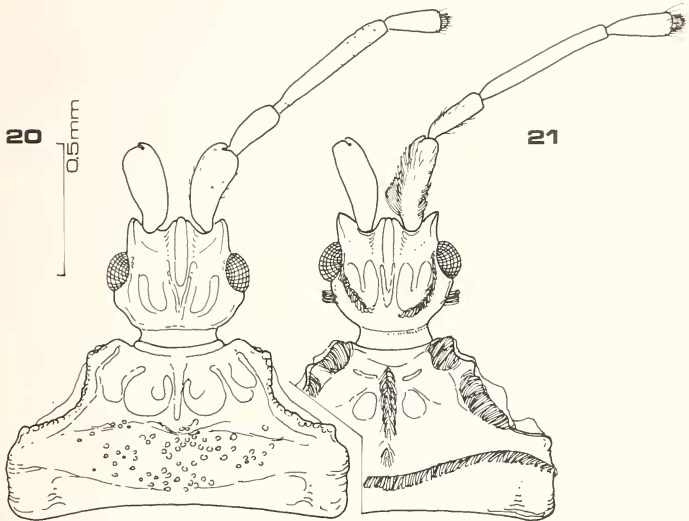
Paratype ♂, India, Meghalaya, Khasi Hills near Cheerapunjee 1200 m, 26.X.1978; Besuchet & Löbl leg; Heiss coll.

Acoryphocoris indicus n. sp. is related to *A. bellicosus* (Kormilev, 1954), but may be separated by the spine-like tuft of hairs on postocular borders and by absence of spine on segment V in the males.

Acoryphocoris similis n. sp. (Figs. 19, 20)

FEMALE. Related to *A. indicus* n. sp., but characteristic tufts of hairs on head and pronotum are absent; infraocular carinae lower; infraocular callosities smooth, with-

out anastomosed thin carinae. Fore disc of pronotum with a deep sulcus behind collar, its lateral borders are similar to those of *A. indicus* n. sp.; hind lobe roughly granulate (almost smooth in *A. indicus*). Scutellum is similar to *A. indicus*. Hemelytra reaching $\frac{3}{4}$ of tergum VII, but corium is shorter, reaching only fore border of connexivum III. Abdomen with posteroexterior angles of connexiva II to VII progressively increasing.



FIGS. 20-21.

20: *Acoryphocoris similis* n. sp., Holotype ♀, head and pronotum;
 21: *Acoryphocoris indicus* n. sp., Holotype ♂, head and pronotum.

but with smaller lobes. Paratergites (♀) conical, reaching $\frac{1}{2}$ of sloping and posteriorly rounded segment IX. Spiracles II lateral; III sublateral and barely visible from above; IV to VI ventral placed close to margin, but not visible from above; VII ventral but slightly visible from above; VIII terminal.

Measurements: head 12:14; relative length of antennal segments I to IV are: 8:6.5:13:7; pronotum 16:34, fore lobe narrower than hind lobe 19:34; scutellum 14:18; abdomen 43:35 (across segment III); width of tergum VIII-12.

Labial atrium split-like, labium not reaching hind border of labial groove, which is closed posteriorly.

Color: dark brown; base of membrane lighter; labium and tarsi yellow brown. Total length 3.55 mm; width of pronotum 1.36 mm; width of abdomen 1.40 mm. Holotype ♀, India, Meghalaya, Garo Hills, Somgsak, 400 m; 2.XI.1978; Besuchet & Löbl leg. Deposited at the Muséum d'Histoire naturelle, Genève.

Genus *Clavicornia* Kormilev, 1960*Clavicornia subparallela* n. sp. (Figs. 22–27)

MALE. Elongate with subparallel sides.

Head shorter than its width across eyes (10:12); anterior process conical, barely longer than antenniferous tubercles; the latter blunt. Eyes large, moderately convex. Postocular borders strongly converging. Vertex with 2 (1+1) parallel rows of granules; infraocular carinae rudimentary; infraocular callosities with thin V-form carinae. Antennae strong, $1.70 \times$ as long as width of head across eyes; relative length of antennal segments I to IV are: 5:3.5:6.5:5.5. Labial atrium split-like, labium reaching hind border of labial groove, which is closed posteriorly.

Pronotum short and wide (16:27); fore lobe much narrower than hind lobe (18:27). Collar sinuate anteriorly; anterolateral angles obliquely truncate, produced slightly beyond collar; lateral notch deep, angular; lateral borders of hind lobe subparallel, converging anteriorly; hind border slightly convex. Fore lobe raised just behind collar in the shape of an inverted triangle; its tip flanked by 2 (1+1) round callosities. 2 (1+1) zig-zag carinae extending across fore and hind lobe sublaterally. Hind disc transversely raised and granulate, sloping and shiny anteriorly.

Scutellum shorter than its basal width (10:13); lateral borders carinate, tip angular; median carina T-shaped; disc transversely rugose.

Hemelytra reaching $\frac{1}{2}$ of tergum VII; corium reaching $\frac{1}{2}$ of connexivum III; basolateral borders of corium carinate, parallel; membrane without veins, transversely wrinkled.

Abdomen with subparallel sides, slightly rounded laterally; longer than its maximum width across segment IV (37.5:27.5). Abdominal tergal plate consisting of fused terga III–VI, with rough puncturation which is delimited laterally by an undulate line; area between this line and connexival suture smooth and shiny. Connexiva II and III fused. Posteroexterior angles of connexiva III to VI slightly protruding, VII forming an obtuse angle. Paratergites subcylindrical, short, reaching $\frac{1}{2}$ of cordate strongly declivous hypopygium, which is as long as wide (4:4). Spiracles II not discernible; III to IV sublateral and slightly visible from above; V lateral; VI ventral, VII sublateral and visible from above; VIII terminal. Venter with transverse rows of fine punctures on sterna III to VI, in the middle of disc.

Legs: Femora and tibiae with fine granulation; front tibiae with subapical comb.

Color: yellow brown, partially darker.

FEMALE. Similar to male, but slightly larger, abdomen more rounded laterally. Paratergites angular, produced beyond tip of segment IX, which is pushed down and forward.

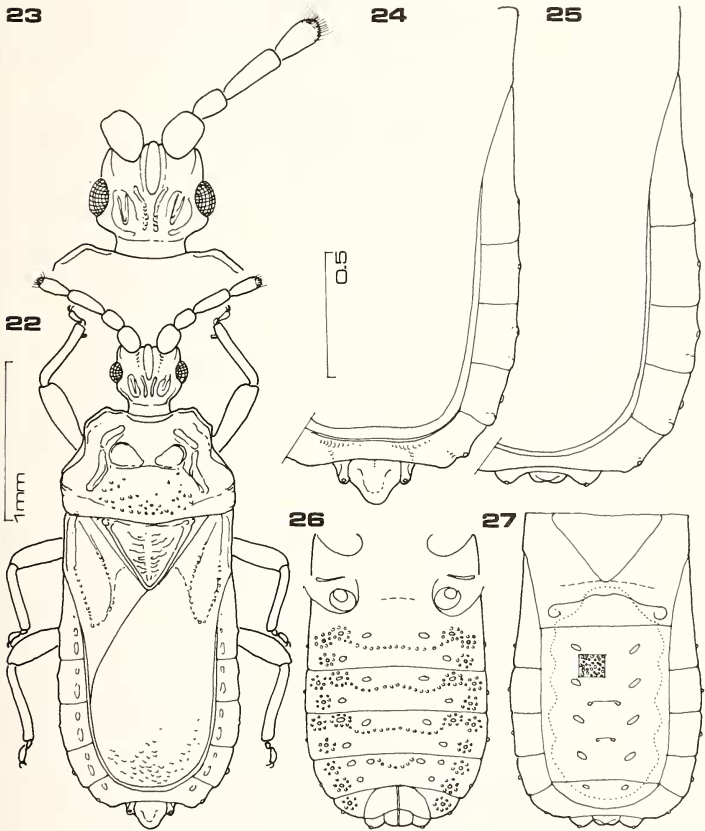
Measurements: head 10:13; relative length of antennal segments I to IV are: 5:4.5:6.5:5.5; pronotum 16:29; scutellum 11:15; abdomen 36.5:29; width of tergum VIII.7.5.

Total length: ♂.3.00, ♀.3.10 mm; width of pronotum: ♂.1.08, ♀.1.10 mm; width of abdomen: ♂.1.14, ♀.1.16 mm.

Holotype ♂, India, Meghalaya, Garo Hills; Rongrengiri, 400 m; 3.X.1978; Besuchet & Löbl leg. Deposited at the Muséum d'Histoire naturelle, Genève.

Allotype ♀, collected with holotype; same collection.

Paratypes: 1 ♀, collected with holotype, 1 ♀, India, Meghalaya, Somgsak 400 m; 2.X.1978; Besuchet & Löbl leg. Mus. Hist. nat. Genève and Heiss coll.



FIGS. 22-27.

Clavicornia subparallela n. sp.;

22: Holotype ♂, dorsal; 23: dto. head and right antenna; 24: dto. connexiva dorsal;
25: Paratype ♀, connexiva dorsal; 26: dto. venter; 27: dto. dorsal abdominal segments.

Clavicornia subparallela n. sp. may be separated from *C. usingeri* Kormilev, 1960, from New Guinea, by slightly larger size, different length of antennal segments, segment III being longer than I, by ventral position of spiracle VI and by anterolateral angles of pronotum having no tooth lateral of collar.

Genus *Mezira* Amyot and Serville, 1843

Mezira (*Zimera* *) *loebli* n. sp. (Figs. 28–32)

MALE. Elongate ovate; with setigerous granulation, setae short, curled and red brown.

Head slightly shorter than its width across eyes (41:42); anterior process constricted and crenate laterally, enlarged and incised anteriorly, reaching $\frac{2}{3}$ of antennal segment I. Antenniferous tubercles acute, with subparallel and crenate outer borders. Postocular tubercles dentiform, reaching outer borders of eyes; the latter strongly protruding. Vertex raised and with setigerous granulation in shape of two inverted "V". Infraocular carinae crenate; infraocular callosities narrow and smooth. Antennae $1.92 \times$ as long as width of head across eyes; all segments with sharp, setigerous granulation, setae are mostly straight. Relative length of antennal segments I to IV are: 20:20:22:19. Labium reaching hind border of labial groove, which is open posteriorly.

Pronotum $\frac{1}{2}$ as long as its maximum width (40:86); collar produced forward and sinuate anteriorly; anterolateral angles rounded and crenate, neither produced forward, nor sideways. Lateral notch forming obtuse angle; lateral borders of hind lobe slightly rounded, strongly converging anteriorly; hind border deeply sinuate medially, angularly produced backward laterad of scutellum. Fore disc with 4 (2+2) strong, granulate ridges, the middle ones are larger and higher than outer ones. Intralobal depression deep. Hind disc with setigerous granulation, particularly on humeri, which are raised; irregularly, transversely rugose medially.

Scutellum shorter than its basal width (42:48); all borders carinate; lateral borders weakly sinuate before apex; tip angularly rounded. Disc transversely raised at base; median ridge strong, transversely rugose; disc granulate laterad of median ridge.

Hemelytra reaching $\frac{2}{3}$ of tergum VII; corium reaching $\frac{2}{3}$ of connexivum III, its basolateral border carinate and straight; apical angle rounded, apical border slightly sinuate interiorly; disc with setigerous granulation. Membrane black with anastomosed veins, which bear dispersed curled setae.

Abdomen longer than its maximum width across segment IV (123:106); lateral borders evenly rounded; posteroexterior angles of connexiva II to VI barely protruding; VII rounded. Connexivum wide; connexiva II to VI raised along hind border and deeply depressed on disc. Paratergites small, clavate, reaching basal $\frac{1}{2}$ of hypopygium; the latter cordate, strongly declivous on posterior half, shorter than its maximum width (25:33); median ridge reaching $\frac{2}{3}$ of disc; disc deeply depressed laterad of median ridge. All spiracles ventral, placed far from border.

Metathoracic scent gland openings long and curved; mesopleura rugose.

* Name *Zimira* Kormilev, 1971, is preoccupied and changed to *Zimera* (*Pacif. Insects* 22 (3-4): 328).

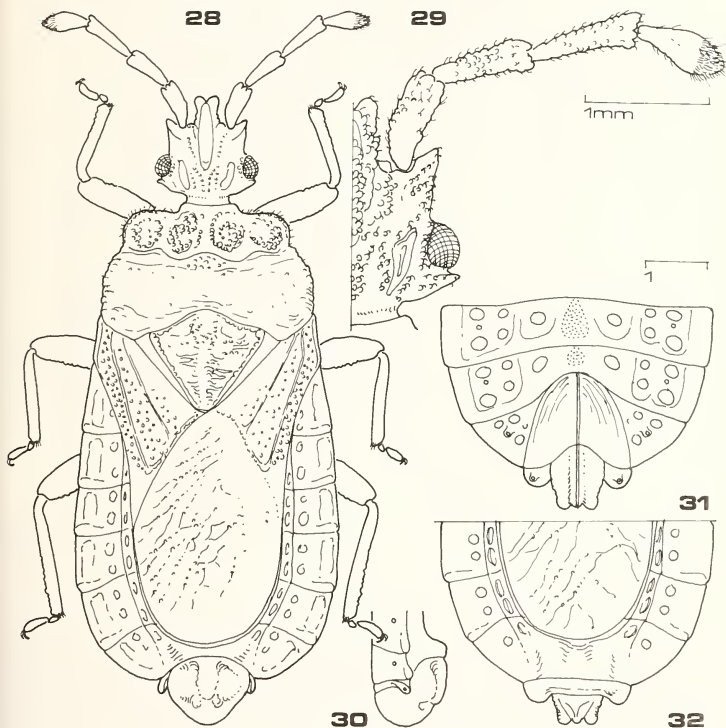
Legs : femora and tibiae unarmed, but with sharp granulation; tarsi without arolia.

FEMALE. Similar to male, but larger. Paratergites rounded posteriorly, reaching $\frac{1}{2}$ of notched segment IX.

Measurements : head 43:43; relative length of antennal segments I to IV are: 20:20:22:18; pronotum 42:90; scutellum 46:52; abdomen 137:110; width of tergum VIII.44.

Color : black; apical half of antennal segment IV and tarsi are brown.

Total length: ♂.10.10, ♀.10.90 mm; width of pronotum: ♂.3.44, ♀.3.60 mm; width of abdomen: ♂.4.00, ♀.4.40 mm.



FIGS. 28-32.

Mezira loebli n. sp.;

28: Holotype ♂, dorsal; 29: dto. head and right antenna; 30: dto. genital segments lateral;
31: Allotype ♀, terminal segments ventral; 32: dto. dorsal.

Holotype ♂, India, Assam, Manas, 200 m; 22.X.1978; Besuchet & Löbl leg. Deposited at the Muséum d'Histoire naturelle, Genève.

Allotype ♀, collected with holotype; same collection.

Paratypes: 1 ♀, 2 ♂♂, collected with holotype; Mus. Hist. nat. Genève and Heiss coll.

It is a pleasure to dedicate this species to Dr. Löbl, who collected this and many other species described in this paper.

Mezira (Z.) loebli n. sp. is related to *Mezira (Z.) longiceps* Kormilev, 1977, also from India, but may be separated from it by: much larger size and setigerous granulation with setae short, curled and red brown.

Mezira (Zimera) membranacea Fabricius, 1803

1803, *Aradus membranaceus* Fabricius; *Syst. Rhyng.* : 118.

1843, *Brachyrrhynchus orientalis* Amyot and Serville; *Hist. nat. Ins.* : 305.

1868, *Brachyrrhynchus membranaceus* Stål, *Hem. Fabr.* : 96.

1953, *Mezira membranacea* Kormilev. *Verh. naturf. Ges. Basel* 64 (2): 339.

1971, *Mezira (Zimera) membranacea* Kormilev; *Pacif. Insects Monogr.* 26: 44.

3 ♂♂, India, West Bengal, Darjeeling Dist., Zeesta, 250 m; 10.X.1978, Besuchet and Löbl leg. (Museum Hist. nat., Genève).

Mezira (Zimera) hsiaoi Bloete, 1965

1964, *Mezira membranacea* Hsiao (not Fabricius), *Acta ent. sin.* 13: 507.

1965, *Mezira hsiaoi* Bloete, *Zool. Verh. Leiden* 75: 36.

1971, *Mezira (Zimera) hsiaoi* Kormilev, *Pacif. Insects Monogr.* 26: 40.

4 ♂♂, 4 ♀♀, India, Meghalaya, Khasi Hills, Cheerapunjee, 1200 m; 26.X.1978; Besuchet & Löbl leg. (Muséum Hist. nat. Genève).

1 ♀, India, Meghalaya, Khasi Hills, Mawsynramet, 1000 m; 27.X.1978; Besuchet & Löbl leg. (Muséum Hist. nat. Genève).

Pseudomezira n. gen. (Photos 1, 2)

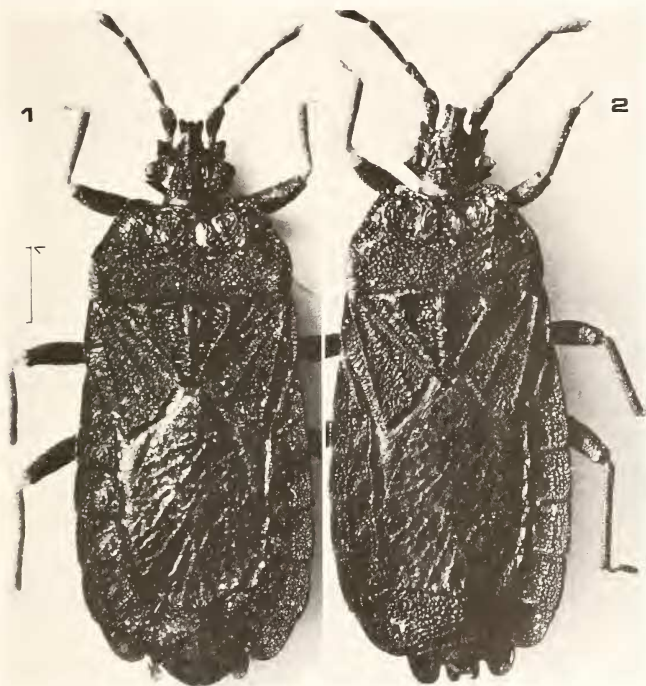
Closely related to *Mezira* A.S., 1843, but labial atrium is open, sterna IV to VI with transverse carina along fore border, hind border of sternum VI widely sinuate medially in one arc in the female, not with double arc as in *Neuroctenus* Fieber. Body naked. Pronotum with 4 (2+2) clusters of low carinae connected anteriorly.

Head shorter than its maximum width across eyes; anterior process cleft anteriorly, reaching $\frac{1}{2}$ of antennal segment I. Antenniferous tubercles short, blunt, with subparallel outer borders. Eyes strongly protruding. Postocular tubercles minute, dentiform. Vertex raised and transversely rugose. Antennae strong, about $1.75 \times$ as long as width of head across eyes; antennal segments I and IV equal in length, II shorter, III the longest. Labium subapical, arising from an open atrium; labial groove closed posteriorly; labium reaching hind border of head.

Pronotum less than $\frac{1}{2}$ as long as its maximum width; collar sinuate anteriorly; anterolateral angles rounded and produced slightly beyond collar; lateral borders of hind lobe slightly rounded, strongly converging anteriorly; lateral notch rudimentary.

Fore disc with 4 (2+2) clusters of low carinae, connected anteriorly; interlobal depression deep; hind disc densely and finely granulate.

Scutellum triangular, carinate on all borders; disc with a stout median ridge; granulate on basal $\frac{1}{3}$, transversely rugose on apical $\frac{2}{3}$.



PHOTOS 1-2.

Pseudomezira nuda (Korm. & Heiss), Paratype ♂ and ♀.

Hemelytra reaching hind border of tergum VI (♀), or slightly produced behind it (♂); corium reaching anterior $\frac{1}{3}$ of connexivum III; its basolateral borders parallel; apical border weakly twice sinuate, inner sinus barely noticeable. Membrane with anastomosed veins.

Abdomen elongate ovate, with subparallel lateral borders from II to V (♀), or slightly rounded (♂); postero-exterior angles of connexiva protruding from III to VI, VII rounded. Connexiva finely granulate. Paratergites (♂) clavate, reaching $\frac{1}{2}$ of hypo-

pygium; the latter very convex on upper side and rounded posteriorly; disc with a double median ridge on basal $\frac{2}{5}$. Paratergites (♀) large and rounded posteriorly, almost reaching tip of incised segment IX.

Metathoracic scent gland openings narrow, curved exteriorly. Mesosternum depressed medially; metasternum much longer than mesosternum (25:15) and with a callous streak medially. Sternum II with similar streak. Sterna IV to VI with transverse carina along fore border like in *Neuroctenus*. All spiracles are ventral.

Legs unarmed, but finely granulate; tarsi without arolia.

Size 7-8 mm.

Type species: *Mezira nuda* Kormilev and Heiss, 1973.

5 ♂♂, 15 ♀♀, India, Gharwal Himalaya, 10 km east of Dhanolti, 2400 m; 21.X.1979; Löbl leg., Mus. Hist. nat. Genève and Heiss coll.

ZUSAMMENFASSUNG

Neue und wenig bekannte Aradidae aus Indien im Naturhistorischen Museum Genf. (Heteroptera). Das von Dr. C. Besuchet und Dr. I. Löbl in Nordindien und Westbengalen aufgesammelte Aradidenmaterial ist von besonderem Interesse, da es mehrere unbekannt Arten enthielt. Nachstehende Taxa werden neu beschrieben: *Acoryphocoris indicus* n. sp., *A. similis* n. sp., *Clavicornia subparallela* n. sp., alle von Nordindien; *Bengalaria gibbosa* n. gen., n. sp. und *B. simplex* n. gen., n. sp., beide von Westbengalen; *Libiocoris indicus* n. sp., *Morphocoris sculpturatus* n. sp., *Neuroctenus meghalayensis* n. sp. und *Mezira (Zimera) loebli* n. sp., alle von Nordindien. Eine neue Gattung, *Pseudomezira* n. gen. wird für die Art *Mezira nuda* Korm. & Heiss, 1973, errichtet, von der nun weiteres Material vorgelegen ist.

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